

# Dulles Corridor Bus Rapid Transit

## Washington, DC Metropolitan Area

(November 2002)

### Description

The Virginia Department of Rail and Public Transportation (VDRPT), in cooperation with the Washington Metropolitan Area Transit Authority (WMATA), proposes to implement a 23.5-mile bus rapid transit (BRT) system as an interim step to rail in the Dulles Corridor located in Northern Virginia. The Dulles Corridor, a rapidly growing suburban area west of Washington, DC, contains major regional employment and residential centers, including Tysons Corner, Reston Town Center, Washington Dulles International Airport, the Town of Herndon, the proposed Smithsonian Air and Space Museum Annex, and new commercial and residential development in eastern Loudoun County.

The BRT project is proposed as the intermediate phase of the Dulles Corridor Rapid Transit project, which will phase implementation of rapid transit technologies throughout the corridor. BRT service will operate in the medians of the Dulles Airport Access Road and the Dulles Greenway from the Metrorail Orange Line in Fairfax County to Route 722 in Loudoun County. The proposed BRT system includes construction of at least three transit stations within the median of the Dulles Airport Access Road and additional stations at major park-and-ride lots within the corridor and Tysons Corner. BRT service is scheduled for operation in 2006.

Rapid transit in the Dulles Corridor would provide a direct connection to the existing Metrorail system and provide reverse-commute service to the increasing number of employment centers located there.

Summary Description	
<b>Proposed Project:</b>	Bus Rapid Transit 23.5 Miles, 7 Stations
<b>Total Capital Cost (\$YOE):</b>	\$357.1 Million
<b>Section 5309 New Starts Share (\$YOE):</b>	\$214.3 Million (60%)
<b>Annual Operating Cost (2025 \$YOE):</b>	\$55 Million
<b>Ridership Forecast (2025):</b>	26,900 Average Weekday Boardings 11,400 Daily New Riders
<b>Opening Year Ridership Forecast (2006):</b>	17,100 Average Weekday Boardings
<b>FY 2004 Finance Rating:</b>	<b>Medium</b>
<b>FY 2004 Project Justification Rating:</b>	<b>Medium</b>
<b>FY 2004 Overall Project Rating:</b>	<b>Recommended</b>

The *Recommended* rating is based on the project's acceptable finance plan and justification. The overall project rating applies to this *Annual Report on New Starts* and reflects conditions as of **November 2002**. Project evaluation is an ongoing process. As New Starts projects proceed through development, the estimates of costs, benefits, schedule, and impacts are refined. **The**

**FTA ratings and recommendations will be updated annually to reflect new information, changing conditions, and refined financing plans.**

The project includes a proposed Federal share of 60 percent in Section 5309 New Starts funding. The Administration is seeking legislation that would limit the Federal New Starts share to no more than 50 percent beginning in FY 2004. Future ratings of this project would be affected by this change.

**Status**

A Major Investment Study (MIS) for the corridor was completed in 1996, recommending construction of a “Metro-like” rail system as the Locally Preferred Alternative (LPA). The Dulles Corridor Task Force issued the Dulles Corridor MIS Refinement in July 1999, reaffirming development of a rail system but with interim development of a BRT system. The phased BRT/rail system was adopted by the National Capital Region Transportation Planning Board, the Metropolitan Planning Organization (MPO) for the Washington region, and included in its Constrained Long Range Plan (CLRP) in October 1999 with a \$2.2 billion cost estimate.

In March 2000, FTA approved initiation of Preliminary Engineering (PE) for the Dulles Corridor Bus Rapid Transit (BRT) Project. This PE approval is applicable only to the BRT project, although it allows for the necessary engineering effort to support the environmental review process with consideration of other modal alternatives, including rail. The Draft Environmental Impact Statement (DEIS), which examines varied phased implementation actions of the BRT and rail alternatives in the corridor, was published in July 2002. WMATA is currently the grant applicant for the project, at the request of VDRPT, and is providing technical oversight and control of the PE and environmental work on the proposed Dulles Corridor BRT project. As a result of the DEIS, rail only for the full corridor has emerged as a new LPA. Formal actions to endorse this LPA, with a cost estimate of \$3.3 billion (escalated dollars), are scheduled for the WMATA Board and the Virginia Commonwealth Transportation Board in November and December 2002, respectively. The MPO must also update its CLRP to account for the increased cost estimate. Subsequent to these actions, VDRPT will request FTA approval to initiate Preliminary Engineering for the rail project and to cease development of the BRT project.

TEA-21 Section 3030(a)(93) authorizes the “Washington, DC – Dulles Corridor Extension” for Final Design and Construction. Through FY 2002, Congress has appropriated \$115.68 million for this project in Section 5309 New Starts funds.

**Evaluation**

The following criteria have been estimated in conformance with FTA’s *Reporting Instructions for the Section 5309 New Starts Criteria*, updated in June 2002. The BRT project will be reevaluated for next year’s New Starts Report and when it is ready to advance into Final Design. The rail only alternative, or any other alternative considered as an intermediate phase of the Dulles Corridor Rapid Transit project, will be evaluated when ready for FTA consideration of approval to initiate Preliminary Engineering, and will replace BRT as the New Starts project at that time.

<b>Project Justification Quantitative Criteria</b>		
<b>Mobility Improvements Rating: Medium</b>		
	<b><u>New Start vs. Baseline</u></b>	
Average Employment Per Station	9,400	
Average Low Income Households Per Station	25	
Transportation System User Benefit Per Project Passenger Mile (Minutes)	4.4	
<b>Environmental Benefits Rating: High</b>		
<b><u>Criteria Pollutant Reduced (Tons)</u></b>	<b><u>New Start vs. Baseline</u></b>	
Carbon Monoxide (CO)	[778]	
Nitrogen Oxide (NO <sub>x</sub> )	[384]	
Hydrocarbons	[146]	
Particulate Matter (PM <sub>10</sub> )	[14]	
Carbon Dioxide (CO <sub>2</sub> )	[439,582]	
<b><u>Annual Energy Savings (million)</u></b> BTU	5,680,762	
<b>Cost Effectiveness Rating: Medium</b>		
	<b><u>New Start vs. Baseline</u></b>	
Cost Per Transportation System User Benefit (current year dollars/hour)	\$18.45	
<b>Operating Efficiencies Rating: Medium</b>		
	<b><u>Baseline</u></b>	<b><u>New Start</u></b>
System Operating Cost per Passenger Mile (current year dollars)	\$0.27	\$0.26

[ ] indicate an increase in emissions.

## Project Justification

### **Rating: Medium**

The *Medium* project justification rating reflects the BRT project's acceptable cost-effectiveness and the less than desirable transit-supportive land use policies in place. Based on 1990 Census data, there are an estimated 175 low-income households within a ½-mile radius of proposed transit boarding areas, approximately four percent of total households within ½-mile radius of boarding areas. Employment within ½-mile of boarding areas is currently estimated at 65,800 and projected at 82,000 for forecast year 2025. EPA has designated the Washington, DC, metropolitan area as a "serious non-attainment area" for ozone and a "moderate maintenance area" for carbon monoxide. The incremental cost per incremental trip is \$15.23.

## **Existing Land Use, Transit-Supportive Land Use Policies and Future Patterns**

### **Rating: Medium**

The *Medium* land use rating reflects the low to moderate density and automobile orientation of existing land uses in the Dulles Corridor, also recognizing that policies to somewhat improve the transit supportiveness of future development have been adopted.

**Existing Conditions:** The proposed Dulles Corridor Bus Rapid Transit (BRT) will serve several suburban major activity centers including Tysons Corner (18 million sq. ft. of office space and two regional malls), Reston Town Center (a large suburban office park/shopping area surrounded by a large planned residential development), the town of Herndon, Dulles International Airport, the proposed Smithsonian Air and Space Museum Annex, and rapidly growing suburban communities in Loudoun County. However, most of the existing development is auto-oriented and the proposed BRT system will utilize the center of the Dulles Airport Access Road (an eight-lane freeway), making pedestrian access to/from the surrounding land uses difficult. With the exception of Dulles Airport, free parking is available throughout the numerous office parks and shopping centers along the corridor. Year 2000 totals for all BRT boarding (½-mile radius) are estimated at roughly 66,000 jobs and 10,400 residents (1,700 residents per square mile). The proposed busway will also serve the Washington, DC central business district indirectly, via a connection with the Metrorail Orange Line.

**Future Plans, Policies, and Performance:** The population in the corridor is expected to increase from 221,000 in 2000 to 336,000 in 2025, an increase of 53 percent. Employment in the corridor is anticipated to increase from 222,000 in 2000 to 362,000 in 2025, an increase of 64 percent. Generally, high population growth is forecast for the Washington, DC metropolitan area (35 percent between 2000 and 2025) and the study area is expected to capture a significant share of that growth. As of 2001, Fairfax and Loudoun Counties have revised their comprehensive plans to support moderate increases in density in transit station areas. These plans allow moderate floor area ratios (FARs) typically of 0.7 to 1.25. Allowable FARs are contingent upon having a mix of uses, including specified percentages of office, retail, and residential, and also may be raised once rail transit is present. Some transit-supportive design requirements are included. Additionally, WMATA has a strong track record of encouraging joint development at Metrorail stations throughout the Washington, DC region. Loudoun County has down-zoned some rural areas to encourage agricultural uses and discourage suburban style development.

## **Local Financial Commitment**

### **Rating: Medium**

The *Medium* local financial commitment rating was determined by the *Medium* rating for the capital financing plan and the *Medium* rating for the operating financing plan.

**Proposed Non-Section 5309 New Starts Share of Total Project Costs: 40 %****Rating: Medium**

The financial plan for the Dulles Corridor BRT comprises Section 5309 New Starts other Federal funds, State and local funds.

<b>Locally Proposed Financial Plan</b>		
<b><u>Proposed Source of Funds</u></b>	<b><u>Total Funding (\$ million)</u></b>	<b><u>Percent of Total</u></b>
<b>Federal:</b>		
Section 5309 New Starts	\$ 214.3	60.0%
Section 5309 Bus Discretionary	\$ 1.0	0.3%
<b>State:</b>		
Commonwealth Priority Transportation Fund	\$ 70.4	19.7%
<b>Local:</b>		
Fairfax County General Obligation Bonds	\$ 55.7	15.6%
Loudoun County BPOL Bonds	\$ 8.5	2.4%
Loudoun County Public Transportation Fund	\$ 2.2	0.6%
Metropolitan Washington Airports Authority Passenger Facility Charges	\$ 5.0	1.4%
<b>Total:</b>	<b>\$357.1</b>	<b>100.0%</b>

**NOTE:** Funding proposal reflects assumptions made by project sponsors, and are not DOT or FTA assumptions. Total may not add due to rounding.

**Stability and Reliability of Capital Financing Plan****Rating: Medium**

The *Medium* rating is based on the sound financial condition of project sponsors and commitment of the majority of local project funding. The Commonwealth of Virginia is the principal financial sponsor of the Dulles Corridor Rapid Transit Project, with local funding participation by Fairfax and Loudoun Counties and the Metropolitan Washington Airports Authority (MWAA). State funding was created under the Virginia Transportation Act of 2000 and is already committed. Plans to secure the commitment of remaining funds entail significant challenges.

**Agency Capital Financial Condition:** The operator of the service has not been formally designated, but is assumed to be the Washington Metropolitan Area Transit Authority

(WMATA), which is funded by participating jurisdictions. The bond rating for the Commonwealth of Virginia is Aaa from Moody's Investor Service and AA from Standard & Poor's Corporation and Fitch, Inc. Fairfax County's general obligation bonds are rated AAA by both Standard & Poor's and Moody's. Loudoun County's notes are rated AA1 by Moody's and AA+ by both Standard & Poor's and Fitch. Project construction would follow the financial model used to develop the Metrorail system to date, with local jurisdictions funding capital and operating expenses.

**Capital Cost Estimates and Contingencies:** Capital cost estimates have been generated through a detailed estimating process based on General Plan engineering documents completed in late 2001, and incorporate a three percent annual inflation rate. Financing costs assume the need for short-term financing to meet the WMATA requirement that 100 percent of project funding be available for obligation prior to awarding construction contracts. Financing costs of \$8 million are estimated for a line of credit over a 4-year construction period, reflecting recent WMATA construction experience. The 9.6 percent overall contingency incorporated in the cost estimate is considered low for a project at this stage of development.

**Existing and Committed Funding:** Funding from the Commonwealth Priority Transportation Fund is budgeted through the programming of \$75 million for the project in a Six Year Program approved by the Commonwealth Transportation Board. Loudoun County funds have been included in the six-year Capital Improvement Fund approved by the Loudoun County Board of Supervisors and can also be considered budgeted. Proposed funding from Fairfax County and MWAA are not committed. MWAA funding would be borrowed against future revenues to be collected from Passenger Facility Charges after 2016, because all revenues projected to be collected before 2016 are committed to other projects, and requires approval by the Federal Aviation Administration. Loudoun County does not currently participate in funding the WMATA system.

**New and Proposed Sources:** Fairfax Counting funding requires voter approval of general obligation bonding. All other funding sources exist although the major capital investment represents a new use of MWAA and Loudoun County funds.

## **Stability and Reliability of Operating Finance Plan**

### **Rating: Medium-High**

The *Medium-High* rating reflects the strong current operating condition of WMATA, including a relatively high farebox recovery rate, the relatively small impact of project operating costs on the WMATA budget, and conservative projections of future WMATA operating financial conditions.

**Agency Operating Financial Condition:** The financial condition of WMATA's current operation is strong, as reflected in part by its relatively high systemwide farebox recovery rate of 53.8 percent. Additional funding requirements for system operating subsidies are allocated among WMATA Compact member jurisdictions according to formula allocations of the affected jurisdictions. WMATA reports a very high operating ratio of 5.5, and reserves of \$286.7 million as of the end of FY 2001. Fairfax and Loudoun Counties report operating ratios of 2.9 and 3.0, respectively.

**Operating Cost Estimates and Contingencies:** Estimated operating and maintenance costs in the opening year of service, assumed to be 2006, total \$21.3 million. Project farebox revenues are forecast to meet 78 percent of project operating costs in 2006, with WMATA compact jurisdictions providing the remaining 22 percent. Over the entire time period from 2006-2025, farebox revenues are forecast to account for approximately 53 percent of required funding. Metrorail operating and maintenance costs are assumed to increase 3.5 percent per year in the short term and at a slightly higher rate in the longer term. The project fare structure is comparable to Metrorail rather than Metrobus. A Metrorail fare increase is assumed in FY 2004, followed by an increase at one-third the rate of inflation every three years thereafter. Metrobus and other system fares are projected to increase three percent annually, at the rate of inflation, while operating costs for these services are projected to rise at twice the rate of inflation. Estimating substantially higher rates of increase in costs than revenues results in overall financial estimates that should be conservative, allowing a substantial margin of error for higher than expected costs and revenue shortfalls.

**Existing and Committed Funding:** The only committed source of operating funds is passenger fares, but WMATA Compact jurisdictions have a solid track record of contributing the shares of operating funding determined through funding formulas. In addition, the relatively low levels of subsidy needed for project operations represent a minor burden on member jurisdictions. The proposed operating funding strategy, therefore, is reasonable and funding sources can be considered reliable. Loudoun County does not currently participate in funding the WMATA system.

**New and Proposed Funding Sources:** Proposed sources of operating funds exist, although the project represents a new use of Loudoun County funds.

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